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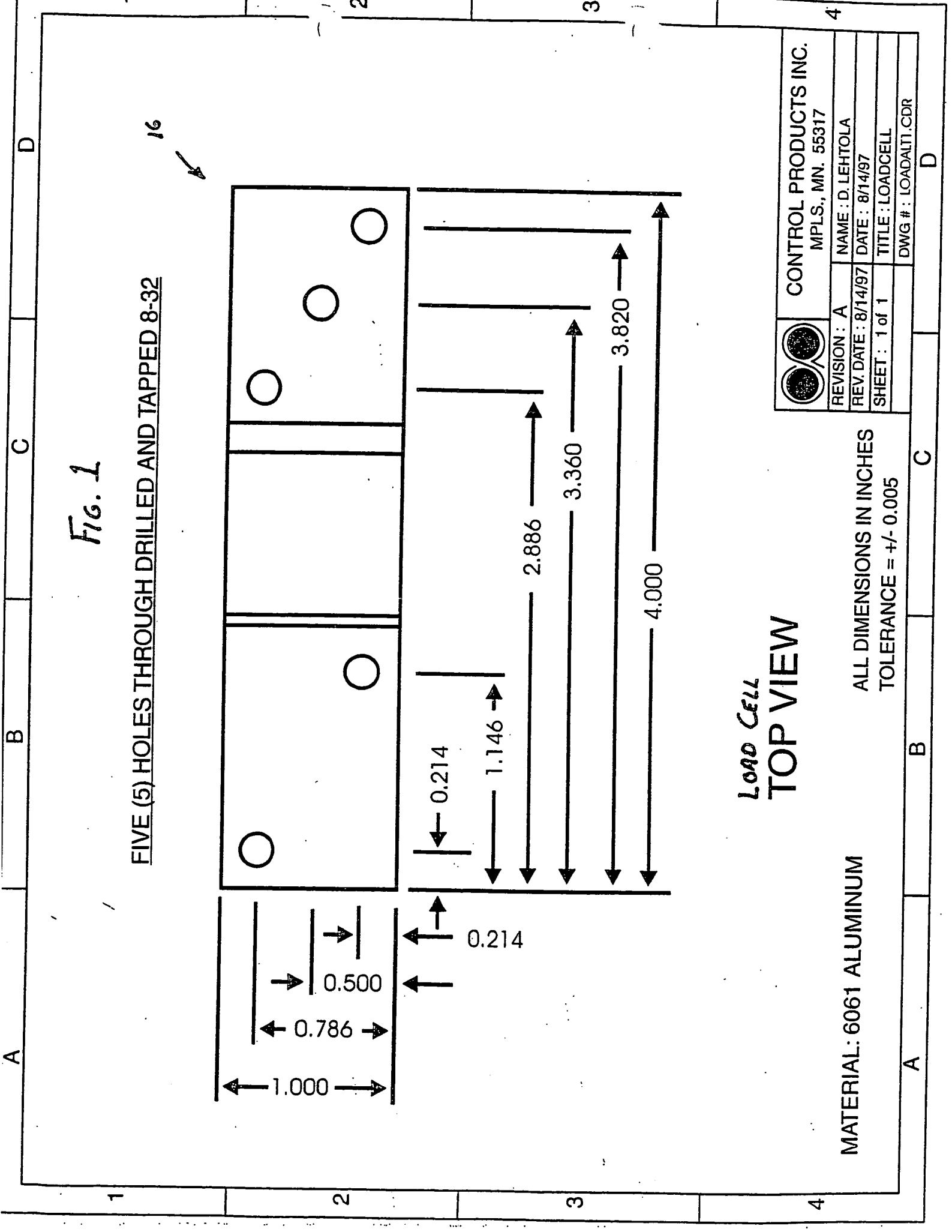


Fig. 1

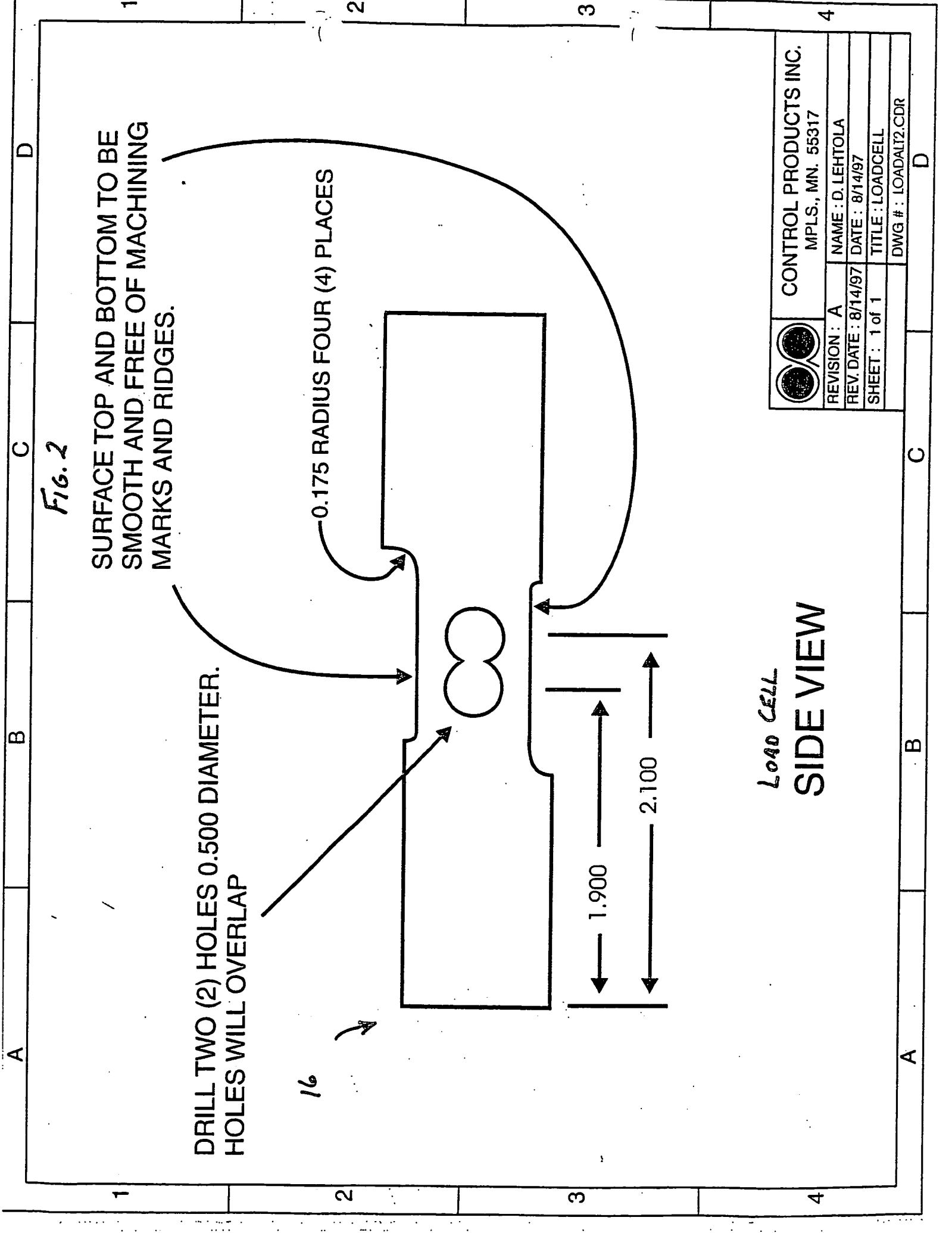
FIVE (5) HOLES THROUGH DRILLED AND TAPPED 8-32

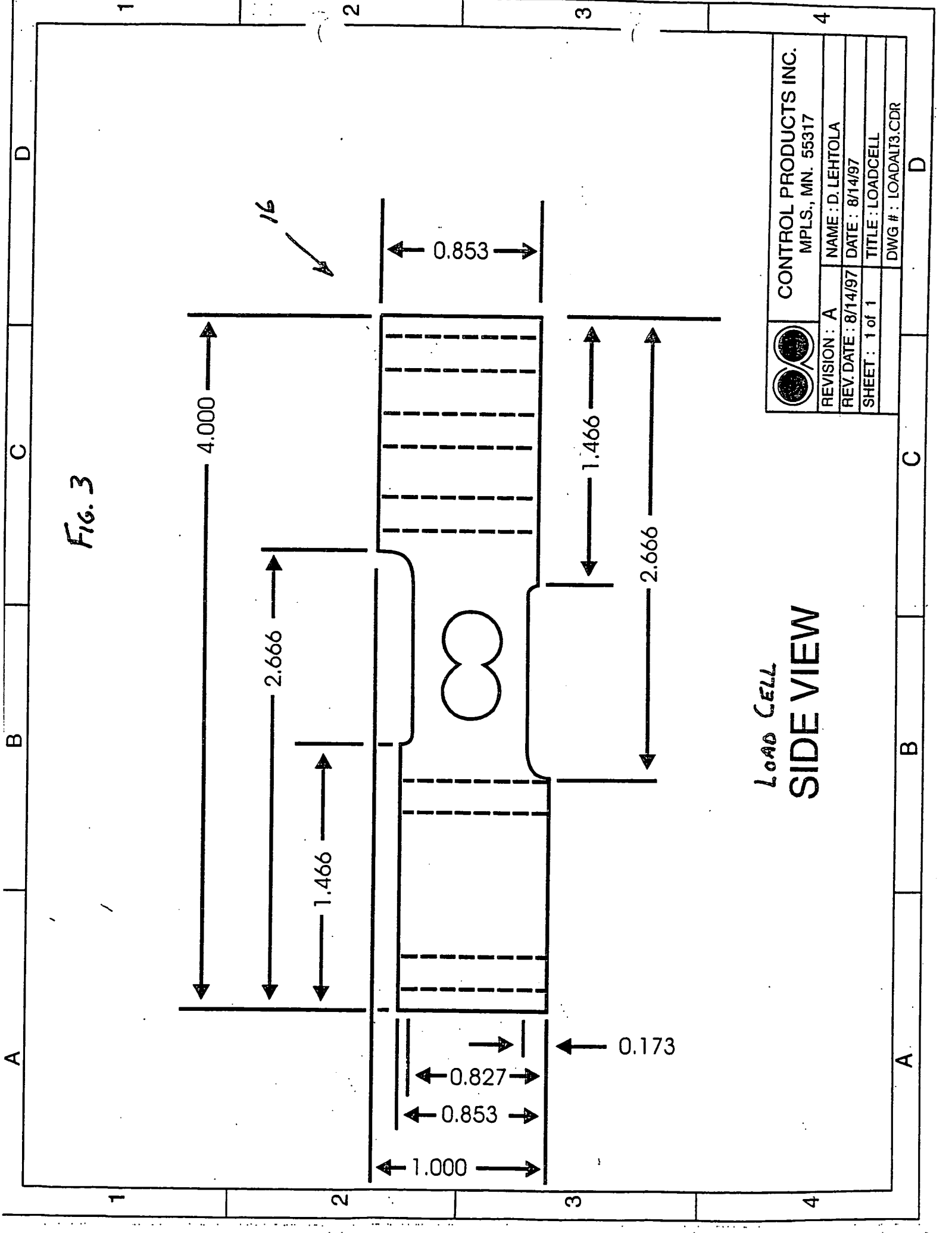
LOAD CELL  
TOP VIEW


MATERIAL: 6061 ALUMINUM

ALL DIMENSIONS IN INCHES  
TOLERANCE = +/- 0.005

	CONTROL PRODUCTS INC. MPLS., MN. 55317		
	REVISION: A	NAME: D. LEHTOLA	
	REV. DATE: 8/14/97	DATE: 8/14/97	
	SHEET: 1 of 1	TITLE: LOADCELL	
		DWG #: LOADALT1.CDR	





		CONTROL PRODUCTS INC. MPLS., MN. 55317	
REVISION : A	NAME : D. LEHTOLA		
REV. DATE : 8/14/97	DATE : 8/14/97		
SHEET : 1 of 1	TITLE : LOADCELL		
		DWG # : LOADAL13.CDR	

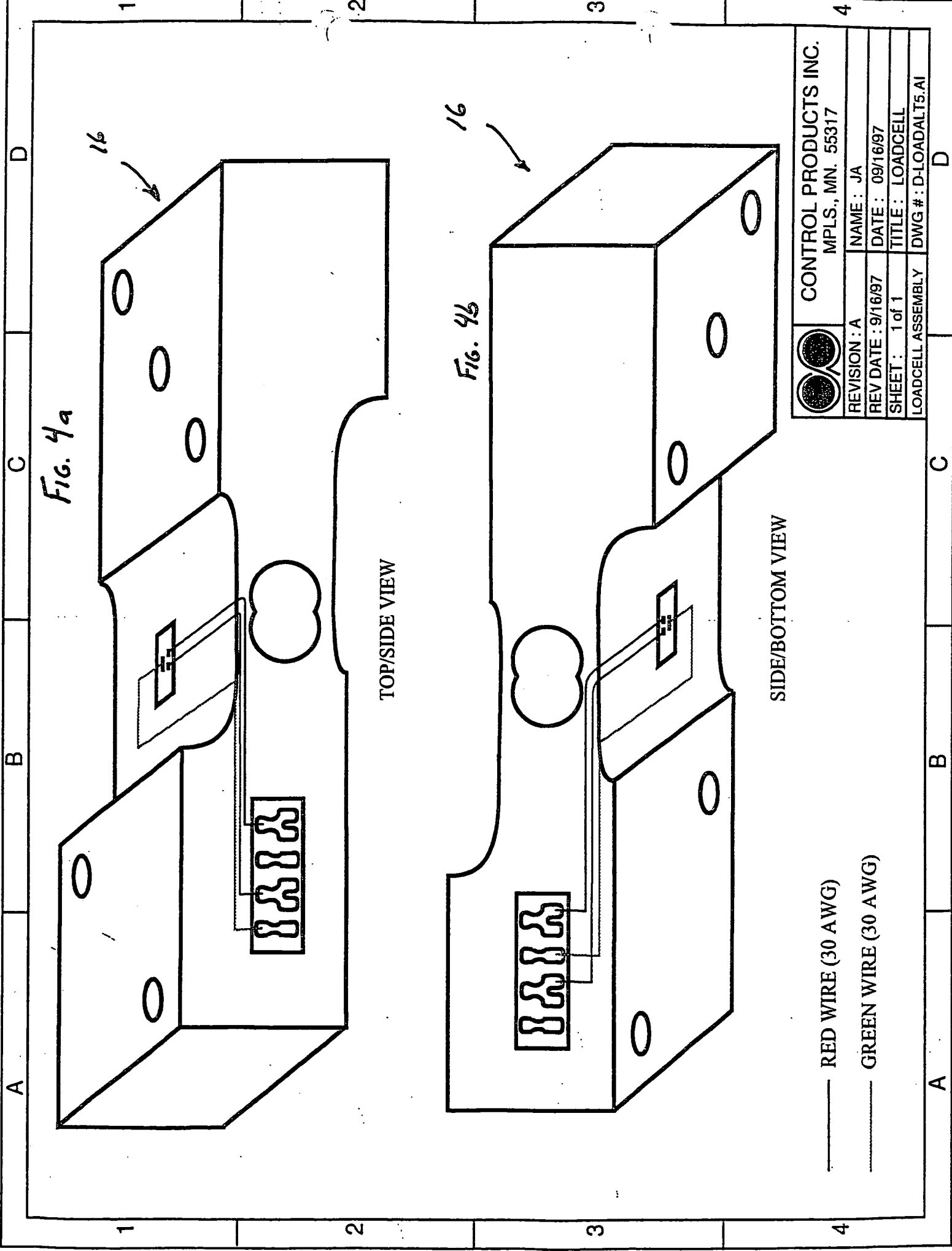


Fig. 4a

Fig. 4b

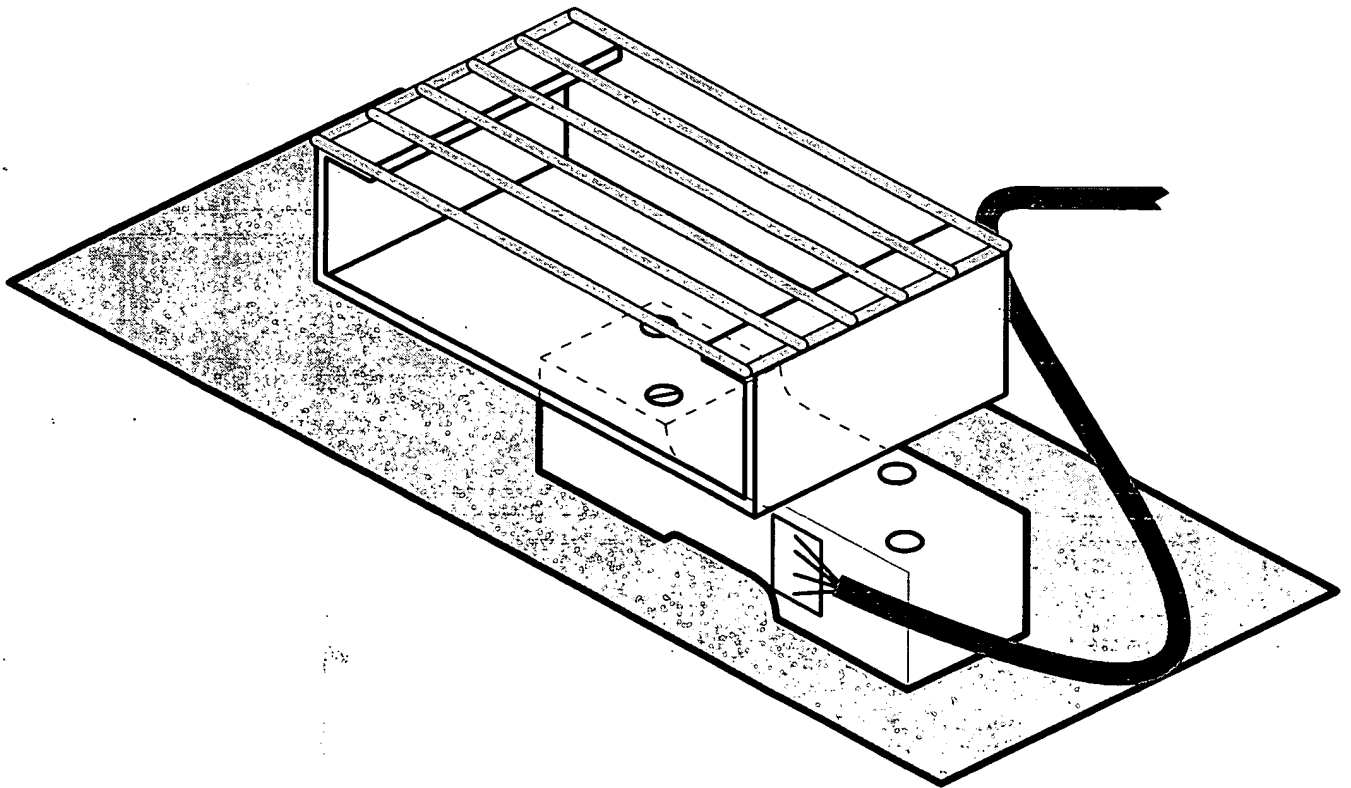
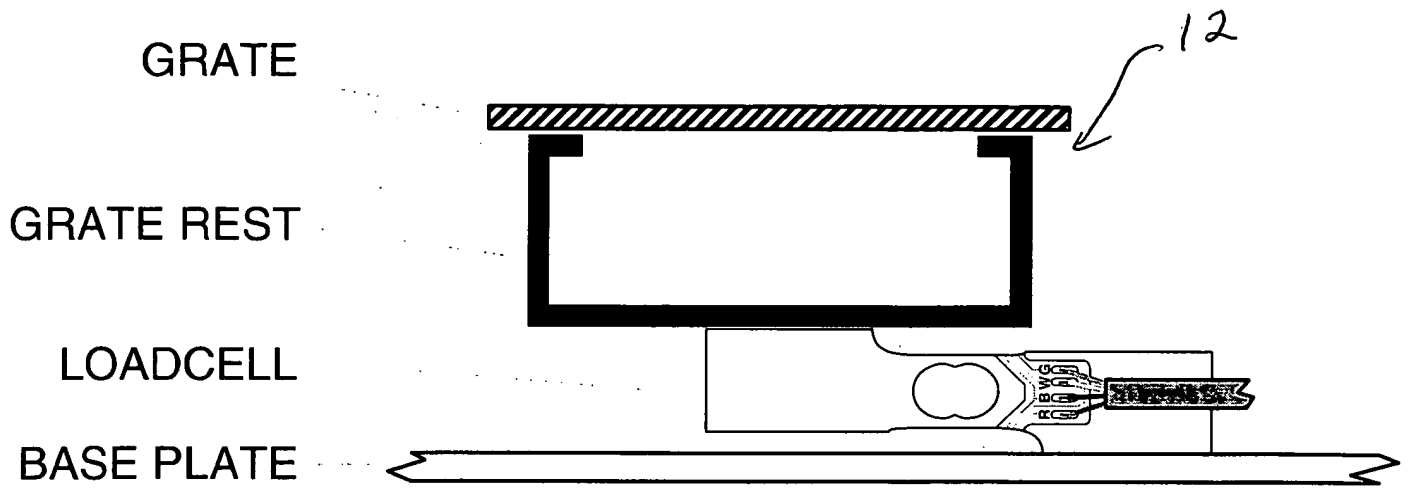
TOP/SIDE VIEW

SIDE/BOTTOM VIEW

- RED WIRE (30 AWG)
- GREEN WIRE (30 AWG)

	CONTROL PRODUCTS INC.			
	MPLS., MN. 55317			
	REVISION : A	NAME : JA		
	REV DATE : 9/16/97	DATE : 09/16/97		
	SHEET : 1 of 1	TITLE : LOADCELL		
LOADCELL ASSEMBLY		DWG # : D-LOADLT5.AI		

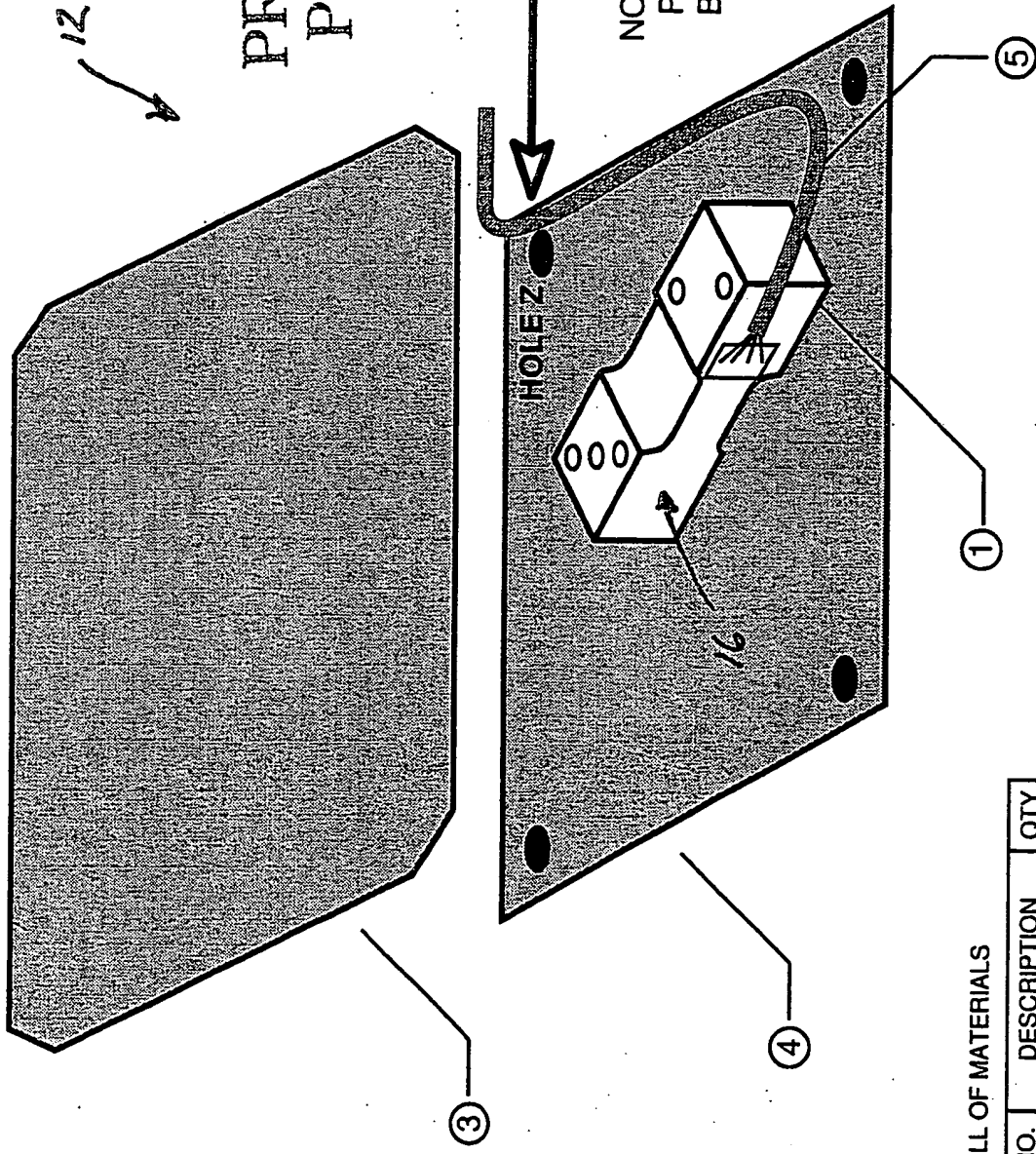
FIG. 5a



RECORD OF REVISIONS

DATE	DESCRIPTION	REV
04/14/98	RE-ROUTE CABLE ASSY	A
05/05/98	CHANGE CABLE ASSY, REMOVE HEATSHRINK	B
06/11/99	REDESIGN OF UPPER PLATE	C

Fig. 5b



PRODUCTION  
PROTOTYPE

BILL OF MATERIALS

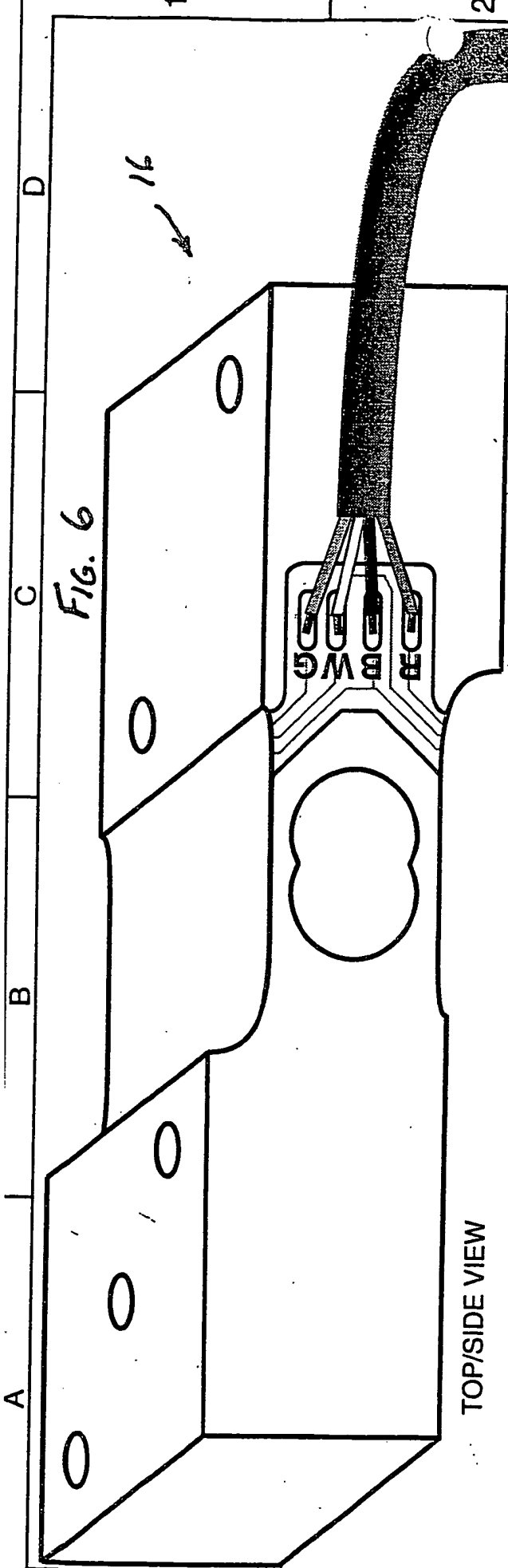
ITEM	PART NO.	DESCRIPTION	QTY
1	34120001	LOADCELL STRAIN GAUGE ASSEMBLY	1
2	34860000	CLAMP, STRAIN RELIEF KEYSTONE 7623	1
3	34520000	PLATE, SCALE, TOP REFRIGERATION	1
4	34530000	PLATE, SCALE, BOTTOM REFRIGERATION	1
5	36530001	CABLE ASSY, 4COND, 24AWG, UL2464, GRAY	1

NOTE: REFER TO DRAWING D-34120002, SHEET#2 FOR LOADCELL AND CABLE ASSEMBLY.

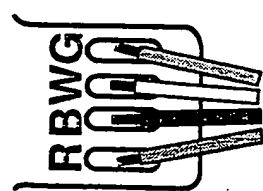


CONTROL PRODUCTS INC.  
Minneapolis, MN. 55317

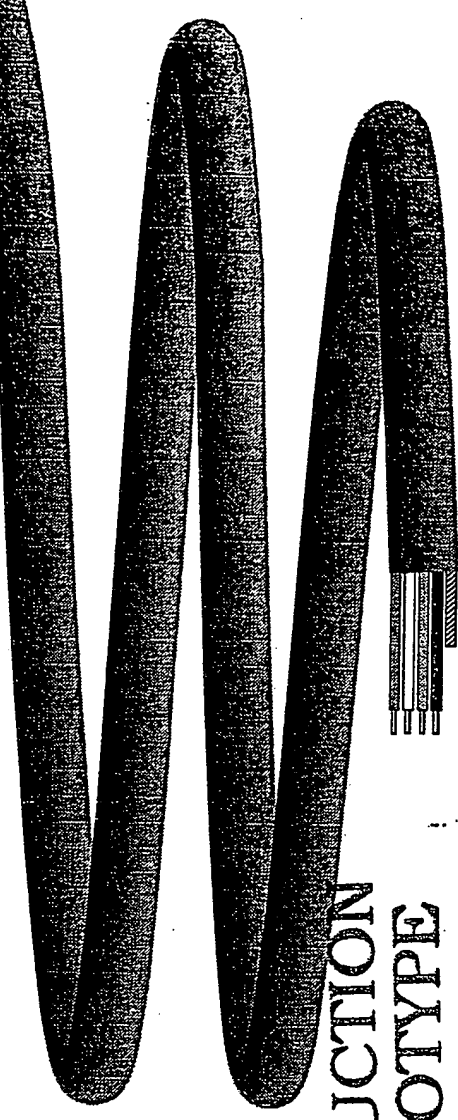
REVISION : C	NAME : EOLSON
REV. DATE : 06/11/99	DATE : 04/14/98
SHEET : 1 of 2	TITLE : LOADCELL PLACEMENT
ASSY DRAWING	Dwg # : D-3412-0002



SOLDER THE 4 CONDUCTOR  
WIRE TO THE LOAD CELL  
USING THE COLOR CODE GIVEN.



DETAIL:  
CABLE CONNECTIONS



PRODUCTION  
PROTOTYPE

DATE	DESCRIPTION	REV
04/14/99	RE-ROUTE CABLE ASSY	A
05/05/98	CHANGE CABLE ASSY, REMOVE HEATSHRINK	B
06/11/99	REDESIGN OF UPPER PLATE	C

RECORD OF REVISIONS

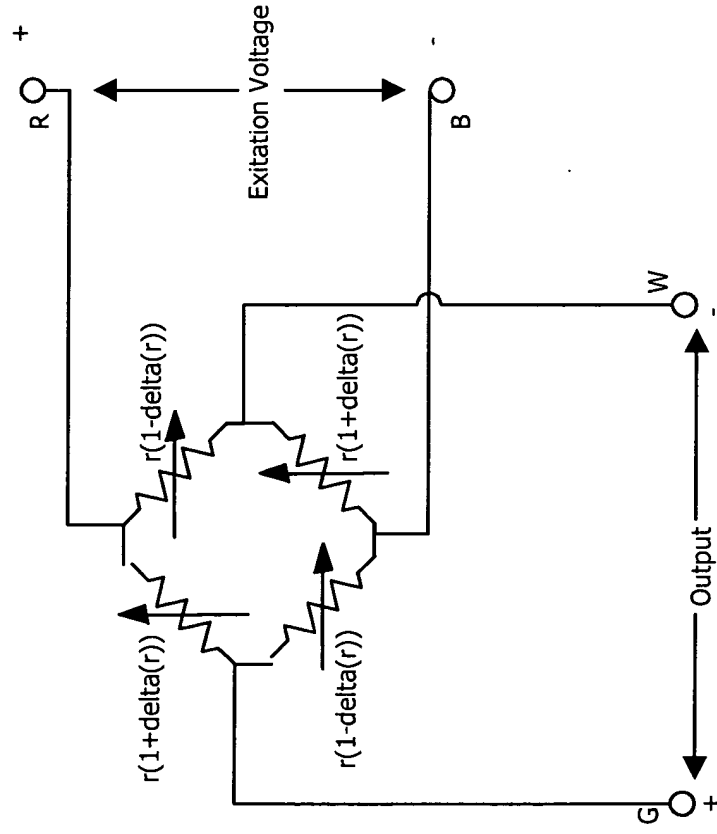
TOTAL CABLE LENGTH :  
63.25 INCHES



CONTROL PRODUCTS INC. Minneapolis, MN. 55317	
REVISION : C	NAME : EOLSON
REV. DATE : 06/11/99	DATE : 04/14/98
SHEET : 2 of 2	TITLE : LOADCELL ASSY
ASSY DRAWING	Dwg # : D-3412-0002

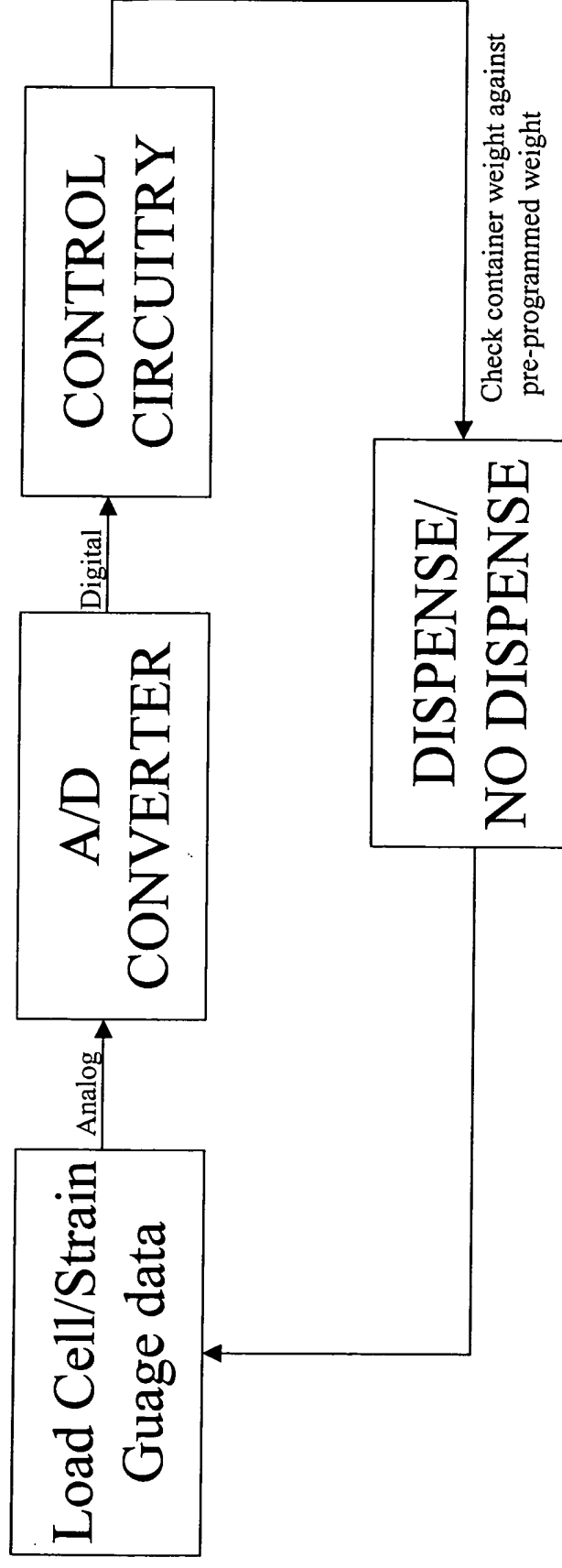
# FIGURE 7a

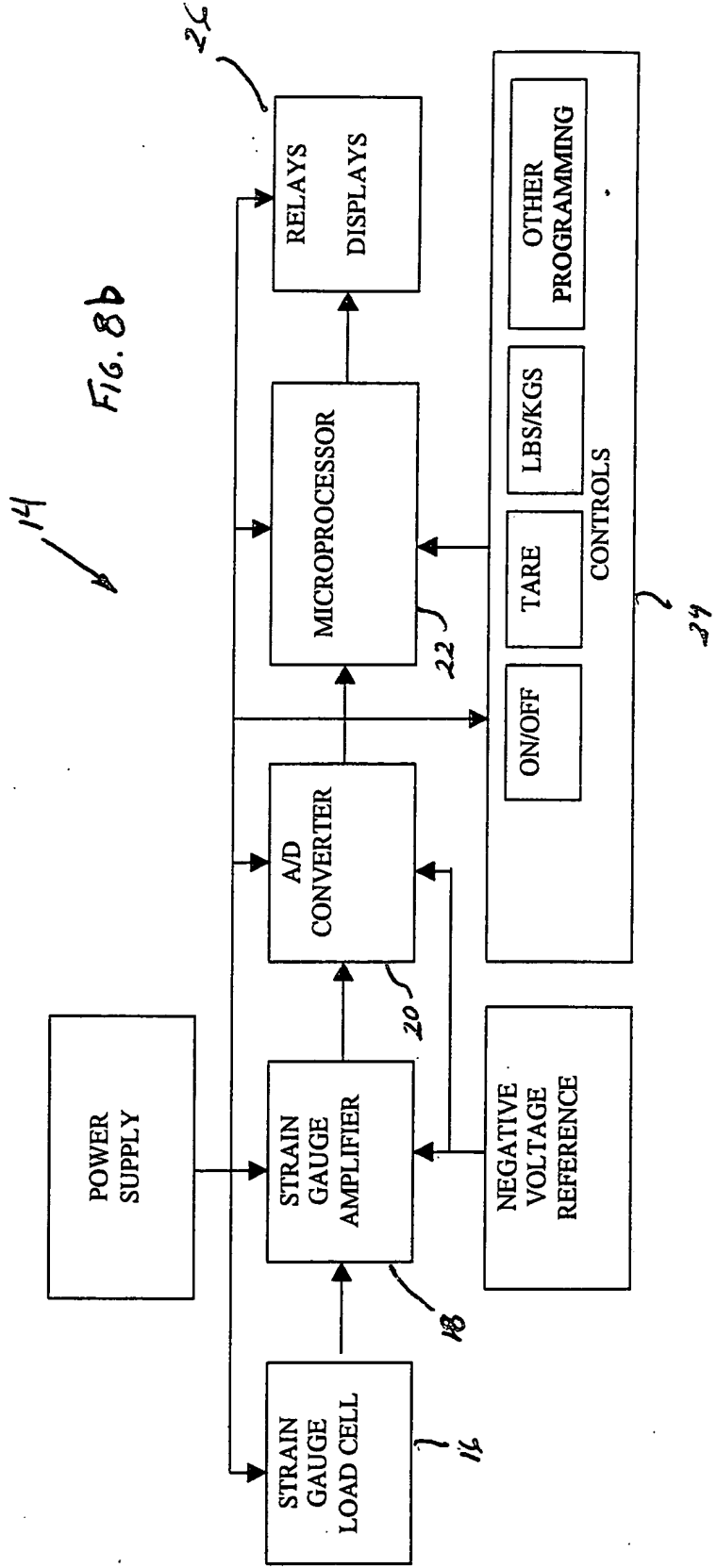
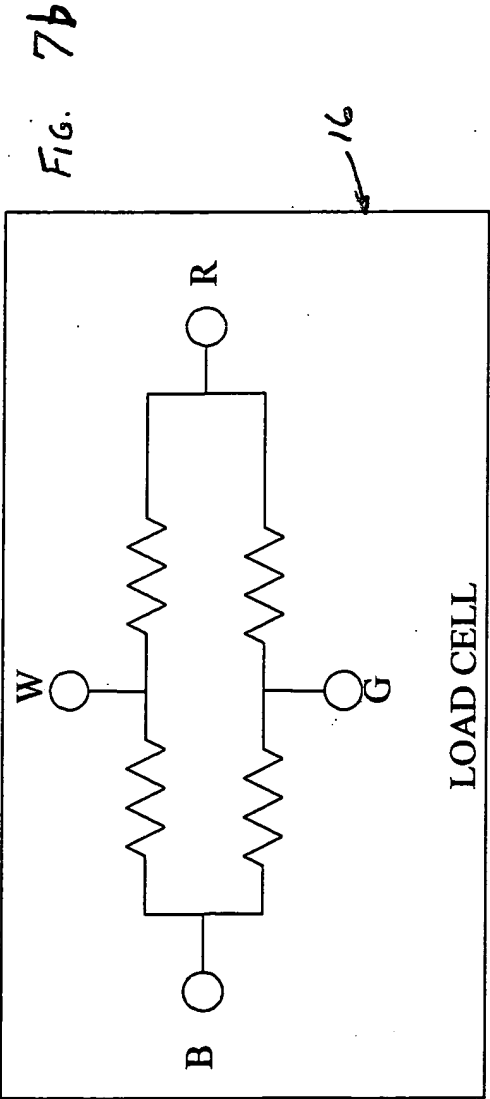
Electrical schematic view of the full bridge resistive load cell.



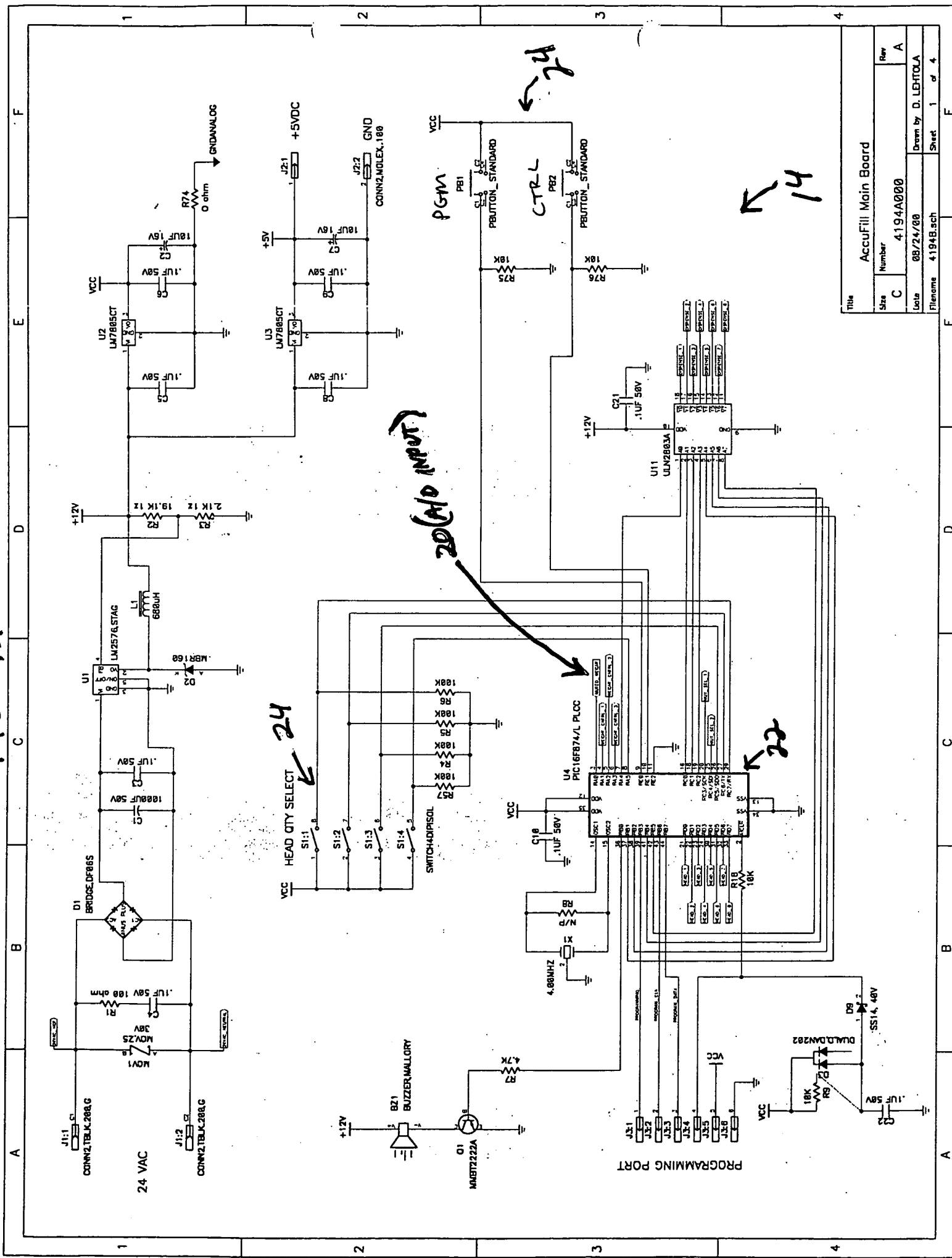
# FIGURE 8a

Control Circuitry block diagram.

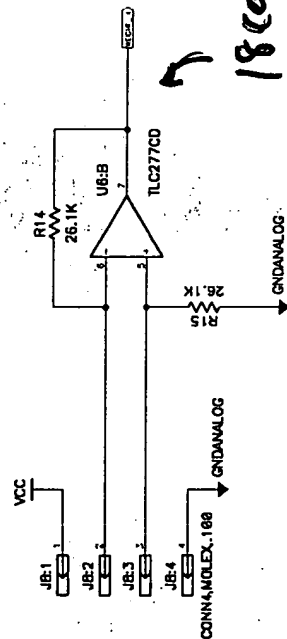
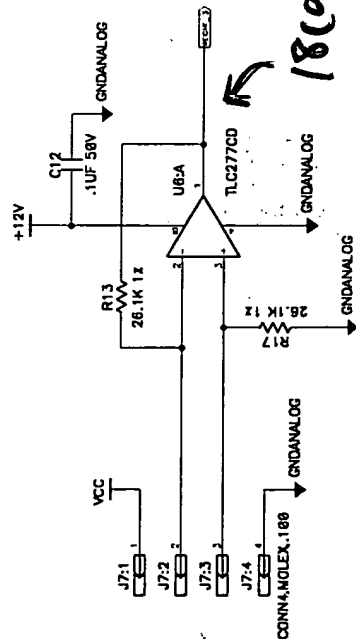
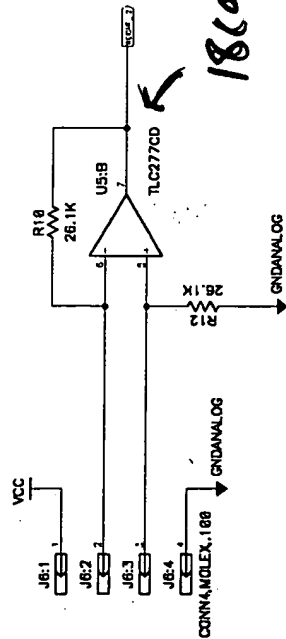
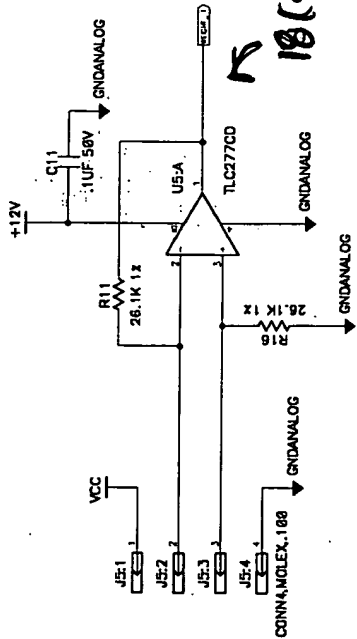




FILE 7A



Title			
AccuFill Main Board			
Size	Number	Rev	
C	4194A000	A	
Date			
08/24/00			
Drawn by D. LEHTOLA			
Filename	4194B.sch	Sheet	1 of 4



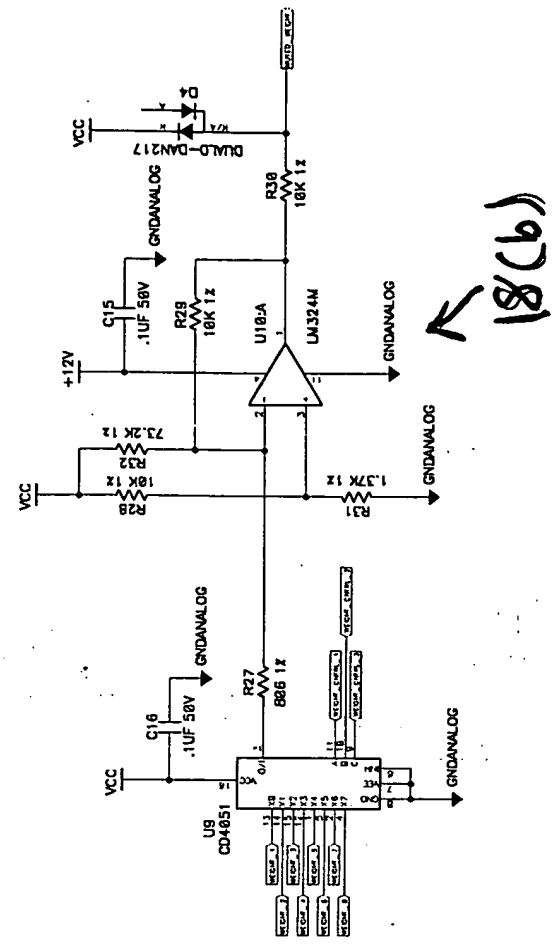
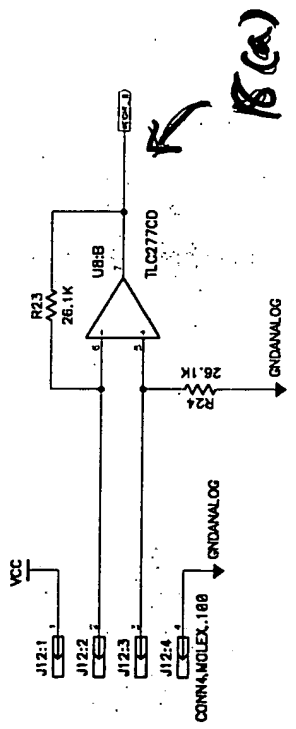
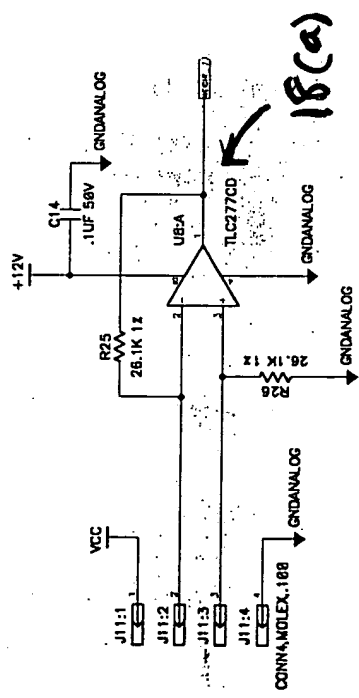
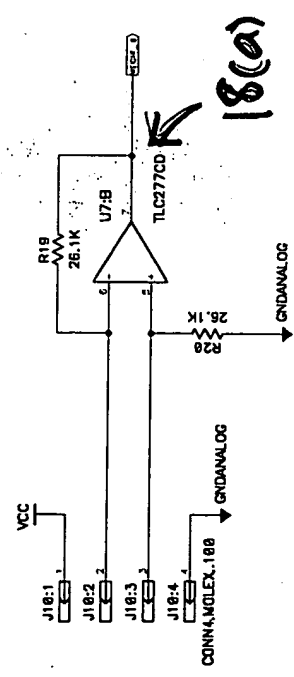
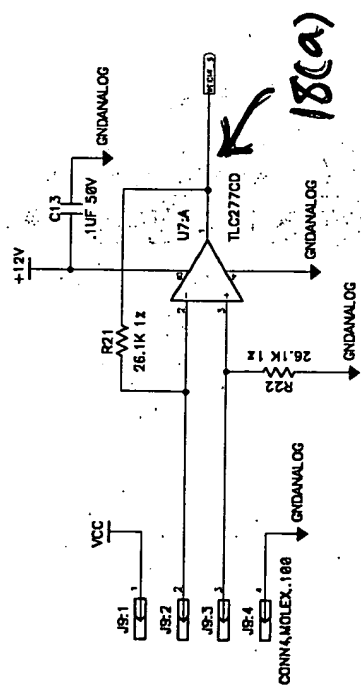
Spare Gate Table		
Last Used	Not Used	Spare Gates
BZ1		
C22		
D18	D5, D6, D7, D8, D10	
J36	J4	
K8		
L1		
M0V1		
P82		
Q1		
R78		
S1		
U15		
X1		U10:B, U10:C, U10:D

Ref Des	Device(Type)	Package	VCC	GND	+5V/GND+12V
U1	LM2576-5TAC	TO-220-5PIN	5.3		
U2	LM7805CT	TO-220(UP)	3	2	1
U3	LM7805CT	TO-220(UP)	2	3	1
U4	PIC16F874/L PLCC	PLCC44	5, 12, 13, 14	1, 3, 11	
U5	TLC277CD	S08			4, 8
U6	TLC277CD	S08			4, 8
U7	TLC277CD	S08			4, 8
U8	TLC277CD	S08			4, 8
U9	CD4051	S016	16		8, 7, 8
U10	LM324M	S014	9		11, 4
U11	ULN2803A	DIP18	16	8, 8, 7	10
U12	4852	S016	16	8, 8, 7	
U13	4852	S016	16	8, 8, 7	
U14	4852	S016	16	8, 8, 7	
U15	4852	S016	16	8, 8, 7	

14

Title			
AccuFill Main Board			
Size	Number	Rev	
C	4194A000	A	
Date	08/24/00	Drawn by	D. LEHTOLA
Filename	4194B.sch	Sheet	2 of 4

FIG. 7A (CONT'D)



14

Title				AccuFill Main Board			
Site	C	Number	4194A000	Rev	A		
Date	08/24/00	Drawn by	D. LEHTOLA	Sheet	3	of	4
Filename	4194B.sch						

FIG. 9A (CONT.)

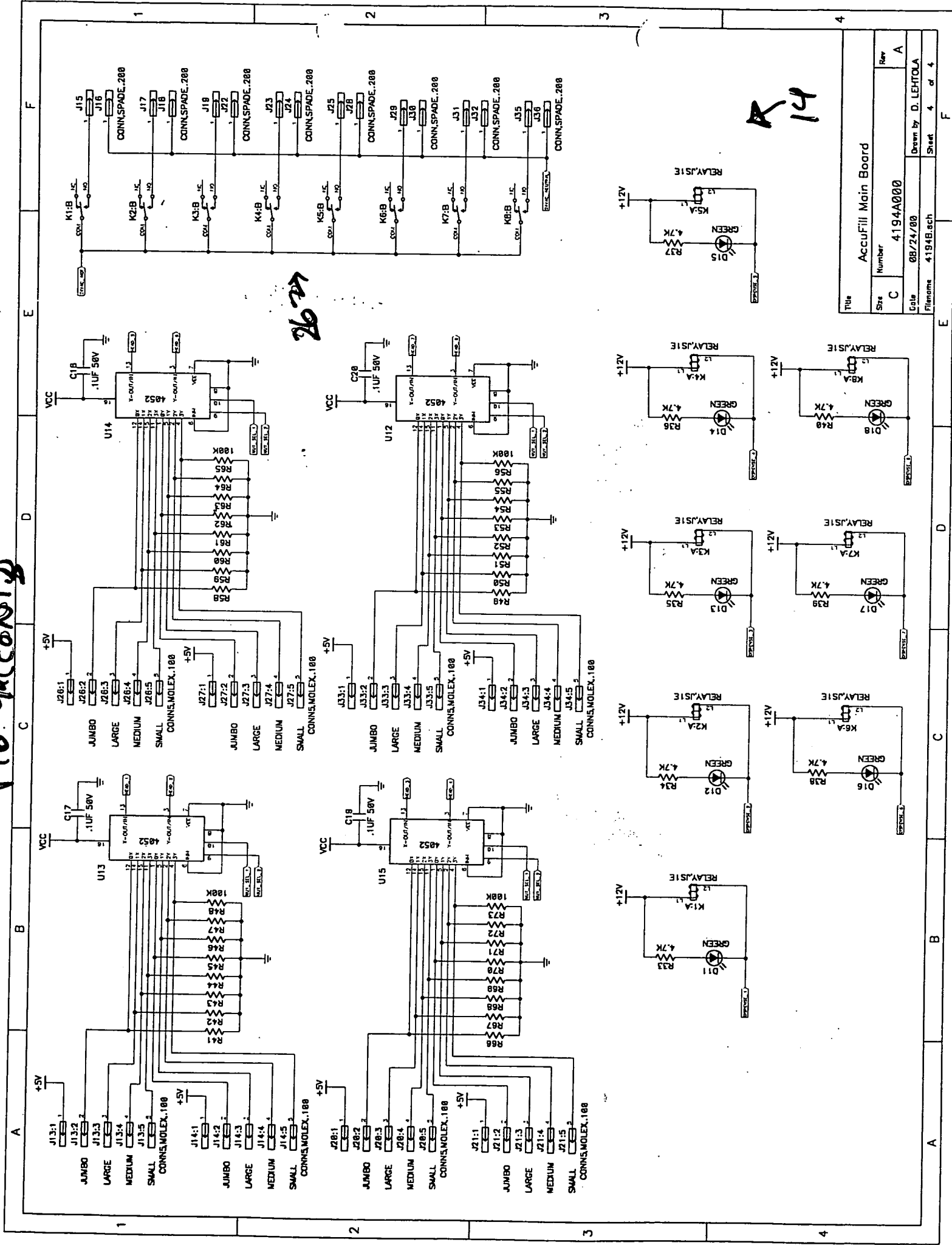
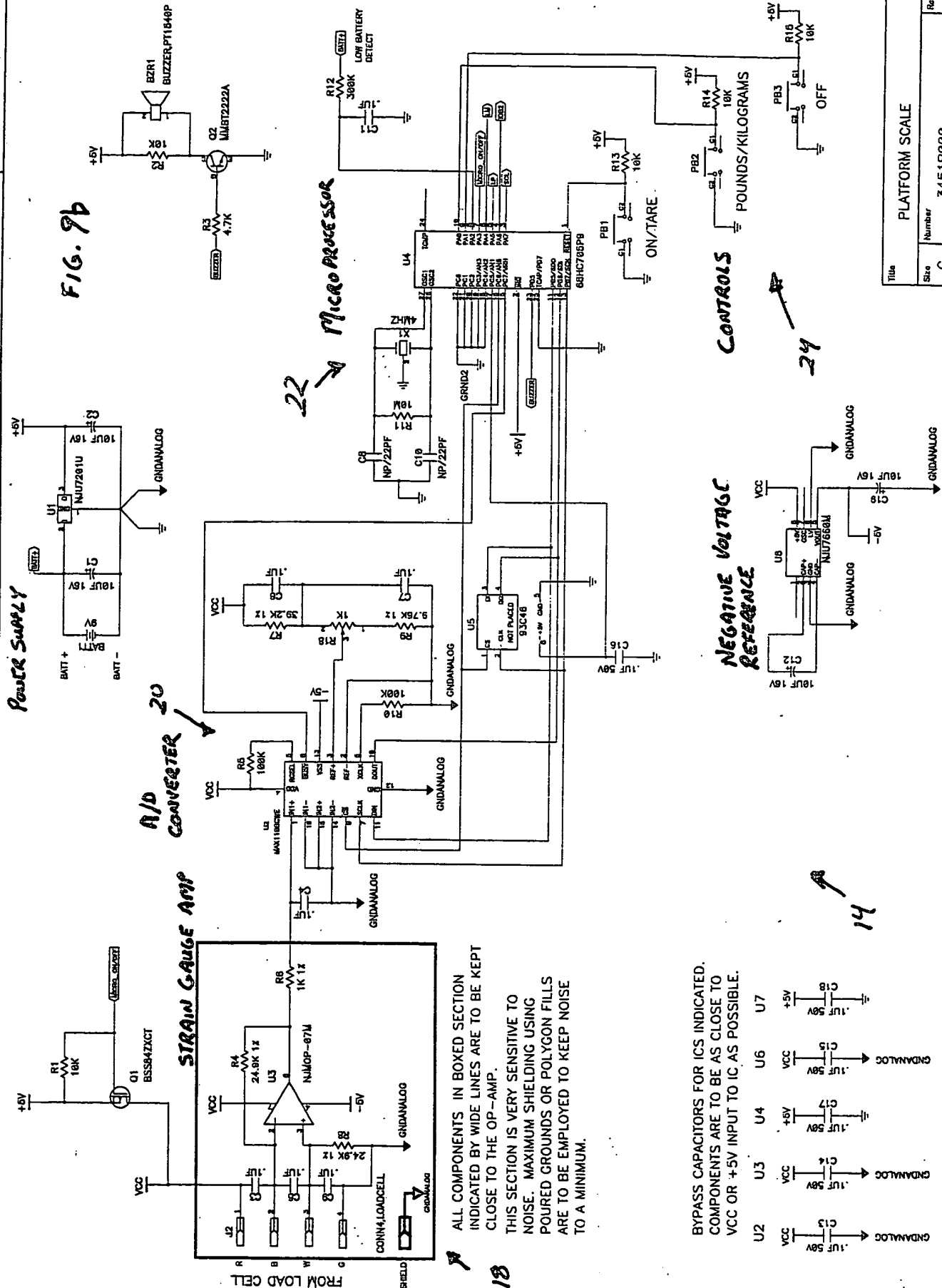
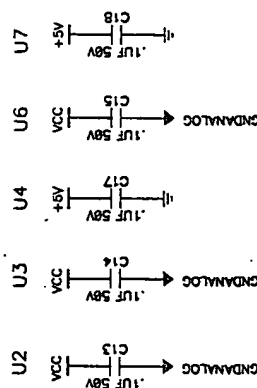


FIG. 9b



ALL COMPONENTS IN BOXED SECTION INDICATED BY WIDE LINES ARE TO BE KEPT CLOSE TO THE OP-AMP. THIS SECTION IS VERY SENSITIVE TO NOISE. MAXIMUM SHIELDING USING POURED GROUNDS OR POLYGON FILLS ARE TO BE EMPLOYED TO KEEP NOISE TO A MINIMUM.

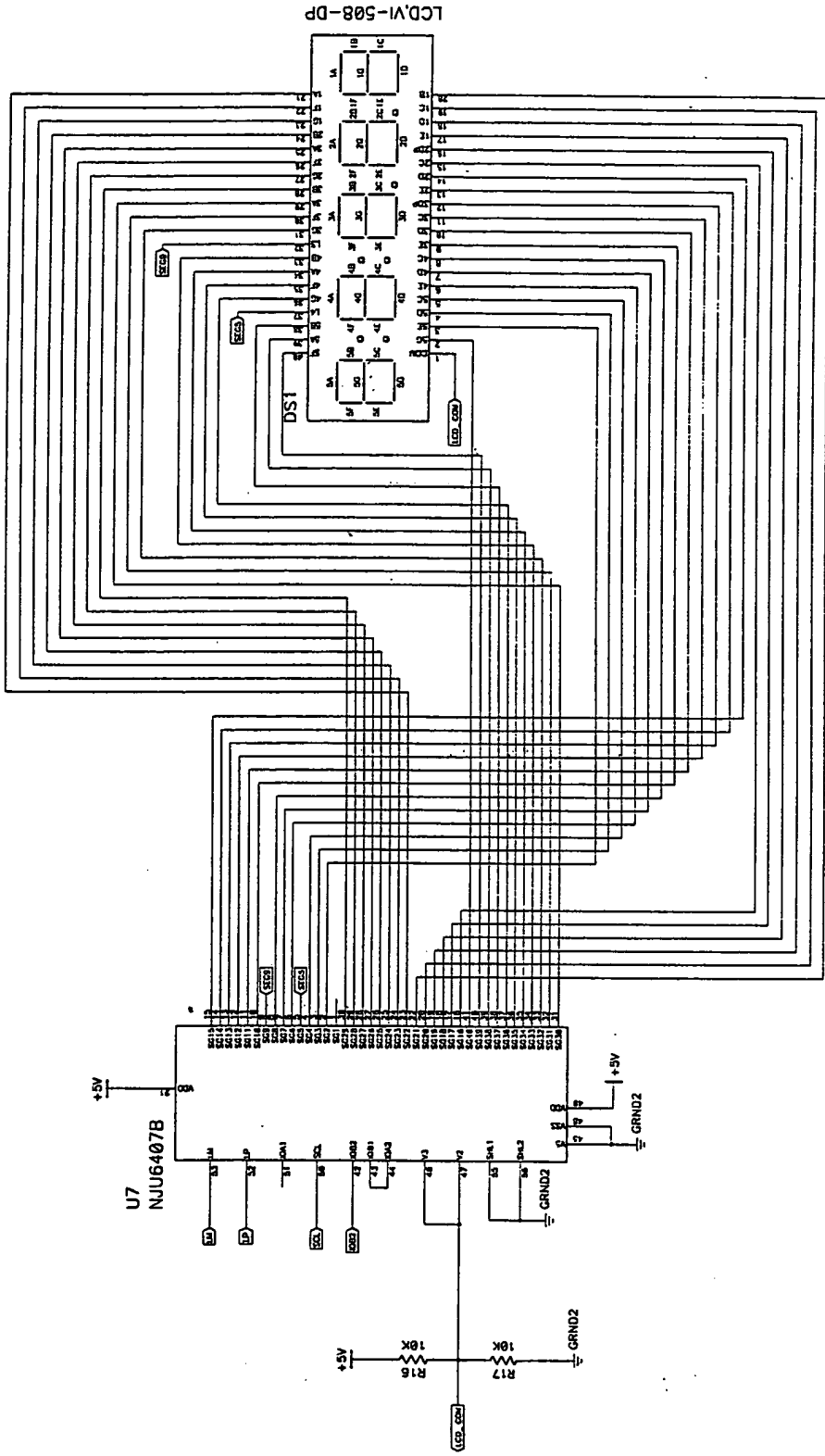
BYPASS CAPACITORS FOR ICs INDICATED. COMPONENTS ARE TO BE AS CLOSE TO VCC OR +5V INPUT TO IC AS POSSIBLE.



Title			
Size	Number	Rev	B
C	3451B000		
Date	04/15/88	Drawn by	D. LEITOLA
Filename	3451b.sch	Sheet	1 of 2

Display

Fig. 10



PLATFORM SCALE			
Title	Size	Number	Rev
	C	3451B000	B
Date	8/15/98	Drawn by	D. LEITCH
Filename	3451b.dwg	Sheet	2 of 2